



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,036	03/01/2002	Munetoshi Tsuge	520.41303X00	8782

24956 7590 04/19/2005

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.
1800 DIAGONAL ROAD
SUITE 370
ALEXANDRIA, VA 22314

EXAMINER

VITAL, PIERRE M

ART UNIT PAPER NUMBER

2188

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/085,036

Applicant(s)

TSUGE, MUNETOSHI

Examiner

Pierre M. Vital

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 5 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/1/02 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

K

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 26, 2005 has been entered.

Response to Amendment

2. This Office Action is in response to applicant's communication filed January 26, 2005 in response to PTO Office Action mailed August 26, 2004. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.

3. In response to the last Office Action, claims 1, 3-6, 9, 11-14 have been amended. No claims have been canceled. No claims have been added. As a result, claims 1-20 are now pending in this application.

4. The objection to claims 1-20 has been withdrawn due to the amendment filed January 26, 2005.

Response to Arguments

5. Applicant's arguments filed January 26, 2005 have been fully considered but they are not persuasive. As to the remarks, Applicant asserted that:

(a) In the present invention, users recognize the functions of each computer and such as they understand each host behaves independently to other hosts. Further, the present invention as recited in the claims allows an user set policy for indicating how storage of the host (SS) should be used to another host (CSS) in order that the user of the host controls the storage. Therefore alleged policy of Walker is entirely different from that of the present invention as recited in the claims.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "users recognize the functions of each computer and such as they understand each host behaves independently to other hosts" and "an user set policy indicates how storage of the host (SS) should be used to another host (CSS) in order that the user of the host controls the storage") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is to be noted that in addition of the synchronization policy, Walker discloses a write protocol (i.e., policy) that allows bidirectional communications between the US,

CSS and SS (see Fig. 2). Thus, it can be clearly seen that Walker discloses an access computer as an access source accesses a file in the auxiliary storage managed by another access computer as a access destination based on a policy information which indicates a access policy.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3, 9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Walker (Bruce Walker et al, "The LOCUS Distributed Operating System", 1983).

Walker discloses a distributed system comprising a plurality of computers connected by a network, where the combined resources of all the computers appear as a single computer to a user (§ 1, paragraph 1). The storage resources of the computers are managed by a distributed file system (§ 2.1, paragraph 1).

Therefore as in claim 1, Walker is understood to disclose an integrated storage management system in which access computers having an auxiliary storage are coupled to each other via a network.

Further as in claim 1, Walker discloses:

a plurality of access computers (§ 1, paragraph 1); and an integrated storage management server (§ 2.3. 1, paragraph 1, item c; Fig. 2, "CSS");

wherein an access computer as the write source sends an inquiry about an access computer as a write destination to be written to the integrated server, said inquiry including information of a file to be written by the access computer as a write source (Fig. 2, § 2.3.3, paragraphs 1-5),

wherein said integrated storage management server selects a candidate of said access computers as the write destination to be written and returns said candidate of said access computers to said access computer as the write source (§ 2.3.1, paragraph 1 ; Fig. 2; § 2.3.3, paragraphs 1-5; § 2.3.5, paragraph 1),

wherein said access computer as the write source selects, when writing the file from the access computer as the write source, an access computer to be used as the write destination to be written which has been returned as the candidate, and writes a file to the access computer as the write destination thus selected as the write destination (§ 2.3.1, paragraph 1; Fig. 2; § 2.3.3; § 2.3.5, paragraph 2),

wherein said integrated storage management server has policy information which defines a write policy that is used when said access computers are used as an access computer as a write destination (§ 2.3.1, paragraph 1 ; Fig. 2, § 2.3.3, paragraphs 1-5), and

wherein said integrated storage management server uses said policy information and said file information in order to select said candidate of said access computers as the write destination to be written (§ 2.3.1, paragraph 1 ; Fig. 2; § 2.3.3, paragraphs 1-5; § 2.3.5, paragraph 1).

As in claim 3, Walker discloses that the integrated storage management server retains location information of a file, wherein the access computer as a delete source which deletes a file in the auxiliary storage managed by another access computer designates location information of a file and inquires an access computer as a delete destination which has the deleted file of the integrated storage management server (§2.3.1, paragraph 1, item c; § 2.3.7, paragraph 5),

wherein the integrated storage management server, based on the policy information and the location information of a file, returns a candidate of the access computer as a delete destination which has the deleted file to the access computer as the delete source, wherein the access computer as the delete source selects an access computer to be used when deleting a file from the access computer as the delete destination which has been returned as the candidate, and deletes a file to the access computer thus selected as the delete destination (§ 2.3.1, paragraph 1, item c; § 2.3.7, paragraph 5).

Method claims 9 and 11 are rejected using the same rationale as for the rejection of claims 1 and 3, respectively as above.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 6, 10, 14 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (Bruce Walker et al, "The LOCUS Distributed Operating System", 1983) as applied to claims 1, 3, 9 and 11 above, and further in view of Fanning (US 6,366,907).

Walker is relied upon for the teachings relative to claims 1, 3, 9 and 11 as above.

As in claim 2, Walker further teaches that the access computer as the write destination which has been written by the access computer as the write source reports the fact that a write procedure has been initiated to the integrated storage management server (§ 2.3.6, paragraph 5).

As to claim 17, the rationale derived from Walker in the rejection of claim 3 is herein incorporated for the teaching of deleting files by an access computer as a delete source to an access computer as a delete destination.

Walker does not teach that the access computer as the write source reports information on the selected access computer as the write destination to be written to the integrated storage management server as further required by claim 2.

Walker also does not teach that in response to an inquiry from the access computer as the write source, the integrated storage management server may return a proxy access computer as a candidate for a write destination, and that the access computer as a write source may write a file to the access computer to be written via the proxy access computer as required by claim 6.

It is noted that Walker teaches a resource sharing mechanism that is known in the art as a hybrid peer-to-peer network architecture. Such an architecture is first distinguished as a peer-to-peer network in that participants in the network share their resources directly, acting as both resource providers and resource requestors. Secondly, a hybrid peer-to-peer network architecture is further distinguished in that a central entity is necessary to provide part of the services in the network. This architecture is evident in Walker, where a current synchronization site (CSS) selects a candidate storage site (SS) from a plurality of candidates in response to a file open request from a user site (US) (§ 2.3. 1, paragraphs 1 and 2, § 2.3.3, paragraph 5), and where the storage site and user site communicate directly to exchange data (§ 2.3.5, paragraph 2).

Fanning teaches a network that also conforms to the definition of a hybrid peer-to-peer architecture (Abstract), where a resource requestor reports information on a selected resource provider to the central entity in order to aid in the selection of an optimum candidate to service a future request (Column 4, lines 25-41).

Therefore regarding claim 2, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to have the access computer as the write source (i.e. resource requestor) report information on the selected access computer as the write destination to be written (i.e. resource provider) to the integrated storage management server (i.e. central entity) in the system of Walker, as would have been suggested in view of the teachings of Fanning as detailed above, due to the similar nature of the problems in both Walker and Fanning, namely to provide a mechanism for pairing requestors and providers in a hybrid peer-to-peer network architecture, and further to aid in the selection of an optimum provider candidate to service future requests as taught by Fanning.

Fanning further teaches that if the requester and provider are behind firewalls the requestor and provider are instructed to connect via a proxy server (Column 5, line 57 to column 6, line 7), where it is readily apparent that the real-time search engine (i.e. integrated storage management server) returns identification of the proxy access computer to the requestor.

Therefore regarding claim 6, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to cause the integrated storage management

Art Unit: 2188

server to return a proxy access computer as a candidate for a write destination in response to an inquiry from the access computer as the write source, and have the access computer as a write source write a file to the access computer to be written via the proxy access computer, in the system of Walker, as would have been suggested in view of the teachings of Fanning as detailed above, due to the similar nature of the problems in both Walker and Fanning, namely to provide a mechanism for the management of resource sharing in a hybrid peer-to-peer network architecture, and further to allow requests to be served when the requestor and provider computers are behind a firewall as taught by Fanning.

Method claim 10 is rejected using the same rationale as for the rejection of claim 2 above.

Method claim 14 is rejected using the same rationale as for the rejection of claim 6 above.

Claim 17 is rejected using the same rationale as for the rejection of claim 2 above.

Method claim 19 is rejected using the same rationale as for the rejection of claim 17 above.

Claim 18 is rejected using the same rationale as for the rejection of claim 2 above.

Method claim 20 is rejected using the same rationale as for the rejection of claim 18 above.

10. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (Bruce Walker et al, "The LOCUS Distributed Operating System", 1983) as applied to claims 1 and 9 above, and further in view of Needham (US Pub 2002/0188735).

Walker is relied upon for the teachings relative to claims 1 and 9 as above.

Walker further teaches an access computer as a delete source, based on location information of a file, selects an access computer to be used when deleting a file from the access computer as a delete destination which has been returned as a candidate, and deletes a file to the access computer thus selected as the delete destination in case that the access computer as the delete source deletes a file in the auxiliary storage managed by another access computer (§ 2.3. 1, paragraph 1, item c; § 2.3.7, paragraph 5), where it is readily apparent in Walker that an access computer as a write source may be one in the same as the access computer as a delete source, in other words that an access computer that writes a file may also delete the file.

Walker does not teach that the access computer as a write source retains location information of a file as required by claim 4.

Needham teaches a peer-to-peer network architecture where the peer computers (i.e. access computers) retain an index describing files located on other peer computers connected to the network (Fig. 1) page 2, paragraphs 14-15).

Needham teaches that storing index information locally allows locating a file without consuming network bandwidth (Page 1, paragraph 12).

Regarding claim 4, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to have a peer computer retain an index that describes files located on other peer computers as described by Needham, in the system of Walker, in order to locate a file without consuming network bandwidth as taught by Needham.

Method claim 12 is rejected using the same rationale as for the rejection of claim 4 above.

11. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (Bruce Walker et al, ("The LOCUS Distributed Operating System", 1983) as applied to claims 1 and 9 above, and further in view of Yang (Beverly Yang et al, Comparing Hybrid Peer-to-peer System, 2001).

Walker is relied upon for the teachings relative to claims 1 and 9 as above.

The rationale derived from Walker in the rejection of claim 3 is herein incorporated for the teaching of deleting files by an access computer as a delete source to an access computer as a delete destination.

Walker does not teach a plurality of storage management integrated servers wherein if an inquiry by an access source to a first storage management integrated server cannot be satisfied, the inquiry is transferred to a second storage management integrated, wherein the second storage management integrated server returns a candidate for the access computer to be accessed if it is able to satisfy the inquiry, as required by claim 7.

Yang teaches a peer-to-peer computing system comprising a plurality of storage management integrated servers (Fig. 1, elements labeled "Local Server" and "Remote Server"; section 3, "General Concepts", lines 6-14) which may be configured in a chained architecture such that inquiries that cannot be satisfied by a first server (i.e. local server) are transferred to a second server (i.e. remote server), and if the remote server is able to satisfy the query it responds with results of the query (Section 3,

"Chained Architecture", lines 1-14). Yang further teaches that with this architecture downloads are fast and scaleable (Section 3, "Chained Architecture", lines 15-17).

Regarding claim 7, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to use a plurality of storage management integrated servers configured in a chained architecture as taught by Yang, in the system of Walker, in order to yield fast and scaleable downloads as taught by Yang.

Method claim 15 is rejected using the same rationale as for the rejection of claim 7 above.

12. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (Bruce Walker et al, "The LOCUS Distributed Operating System", 1983) as applied to claims 3 and 9 above, and further in view of Rabinovich (Michael Rabinovich et al, Not all hits are created equal: Cooperative proxy caching over a wide-area network, 1998).

Walker is relied upon for the teachings relative to claims 3 and 9 as above.

Walker does not teach location information of a file that includes information about an integrated storage management server to which an inquiry will be transferred, as required by claim 8.

Rabinovich teaches a web caching system where proxy caches cooperate ms peers (Page 2, section 2, paragraph 2), and where a first proxy cache maintains an index of web pages in a directory that may specify a second proxy cache to which a request for the web page is forwarded if the first proxy cache cannot satisfy the request (Page 8, section 4.4, paragraph 1). Rabinovich teaches that this enables proxy caches to share objects only with other proxy caches in its vicinity, thereby reducing the overhead of object location (Page 10, section 7, paragraph 2). It is noted that a proxy cache responds to requests for objects (e.g. files) and seeks to locate them in a local storage. In this manner, the proxy cache fulfills a similar role as the integrated storage management server of the claim.

Regarding claim 8, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to include location information of a file that comprises information about a proxy cache (i.e. integrated storage management server) to which an inquiry will be transferred as taught by Rabinovich, in the system of Walker, in order to reduce the overhead of object location as taught by Rabinovich.

Method claim 16 is rejected using the same rationale as for the rejection of claim 8 above.

Allowable Subject Matter

13. Claims 5 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

As per claims 5 and 13, the prior art of record does not teach or suggest "an integrated storage management system wherein, a policy information managed by a integrated storage management server has definitions of a type of computer for indicating whether said access computer is always connected to said integrated management system or not, total available space of the auxiliary storage which is offered to other access computers, available time zone for indicating accessible time for other access computers, and priority of selection of an access computer as a write destination for indicating a degree when said access computer is selected by other access computers as a write source, for respective access computers" in combination with the other elements set forth in the claimed invention.

Conclusion

15. The examiner requests, in response to this Office action, any reference(s) known to qualify as prior art under 35 U.S.C. sections 102 or 103 with respect to the invention as defined by the independent and dependent claims. That is, any prior art (including any products for sale) similar to the claimed invention that could reasonably be used in a 102 or 103 rejection. This request does not require applicant to perform a search. This request is not intended to interfere with or go beyond that required under 37 C.F.R. 1.56 or 1.105.

The request may be fulfilled by asking the attorney(s) of record handling prosecution and the inventors)/assignee for references qualifying as prior art. A simple statement that the query has been made and no prior art found is sufficient to fulfill the request. Otherwise, the fee and certification requirements of 37 CFR section 1.97 are waived for those documents submitted in reply to this request. This waiver extends only to those documents within the scope of this request that are included in the application's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this request and any information disclosures beyond the scope of this are subject to the fee and certification requirements of 37 CFR section 1.97.

In the event prior art documentation is submitted, a discussion of relevant passages, figs., etc., with respect to the claims is requested. The examiner is looking for specific references to 102/103 prior art that identify independent and dependent claim limitations. Since applicant is most knowledgeable of the present invention and

submitted art, his/her discussion of the reference(s) with respect to the instant claims is essential. **A response to this inquiry is greatly appreciated.**

16. The examiner also requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

17. When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

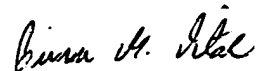
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre M. Vital whose telephone number is (571) 272-4215. The examiner can normally be reached on 8:30 am - 6:00 pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2188

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 13, 2005



Pierre M. Vital
Primary Examiner
Art Unit 2188